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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,449	03/26/2004	Johann Arnold	Q79528	8131

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EXAMINER	
MAIS, MARK A	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/809,449	ARNOLD ET AL.	
	Examiner	Art Unit	
	Mark A. Mais	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/26/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) was filed on March 26, 2004. The submission is in compliance with the provisions of 37 C.F.R. 1.97. According, the examiner considered the IDS.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Regarding claim 8, "A program product" is related to computer-related invention, which falls into the same general categories as non-statutory, namely natural phenomena such as magnetism, and abstract ideas or laws of nature, which constitute "descriptive material". Descriptive material can be characterized as either "functional descriptive material" or "non-functional descriptive material". In this context, "A program product" is characterized as the "functional descriptive material" consists of data structures and computer programs. On the other hand, the "Non-functional descriptive material" includes music, etc. Therefore, both types of "descriptive material" are non-statutory when claimed as descriptive material per se. Data structures or computer programs stored

in a computer readable medium are descriptive material and are not statutory because they are neither physical "things" nor statutory processes and a computer program itself is not a process.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for receiving data telegrams, which are identified by identifiers, in an isochronous real-time fast Ethernet data network, does not reasonably provide enablement for "computer product" for performing the claimed method. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to the invention commensurate in scope with these claims (i.e., to create a computer product for performing the claimed method).

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-8 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nelson (WO 00/13376).

9. With regard to claim 1, Nelson discloses a method for receiving data telegrams, which are identified by identifiers, in an isochronous real-time fast Ethernet data network for real-time communication **[Ethernet, page 5, line 2]**, wherein a node has at least a first receive port and a second receive port **[interpreted as being received from 2 distinct paths]**, and wherein the data network has at least one redundant network path, the method comprising:

at the first receive port, receiving a first data telegram at a first timer value **[the first packet's arrival time (interpreted as the first timer value) is saved, page 10,**

lines 15-22], wherein the first data telegram has an identifier **[node D receives duplicate packets from one path as well as from the redundant path, col. 5, lines 18-25; each packet has an individual identifier which allows the receiving node to determine which packets are duplicates, page 9, lines 30-31]**;

in a memory of the node, storing user data of the first data telegram in an address space **[each packet has an individual identifier which allows the receiving node to determine which packets are duplicates, page 9, lines 30-31; address space is interpreted as each individual packet's location within the entire message]** that is assigned to the identifier **[each packet is stored—thus allowing the receiver to determine if the packets are duplicates, page 9, lines 25-31]**;

storing the first timer value **[the first packet's arrival time (interpreted as the first timer value) is saved, page 10, lines 15-22]**;

at the second receive port, receiving a second data telegram at a second timer value **[the redundant packet's arrival time (interpreted as the second timer value) is saved, page 10, lines 15-22]**, wherein the second data telegram has the identifier of the first data telegram **[node D receives duplicate packets from one path as well as from the redundant path, col. 5, lines 18-25]**; and

if the first timer value and the second timer value are not identical, overwriting the address space and the stored first timer value of the first data telegram with user data of the second data telegram and with the second timer value of the second data telegram **[from the sequence of received packets, it can be determined if the original packets did not arrive because the redundant packets will contain the correct identifier of the packet (e.g., when node D saves both primary and redundant packets to verify**

integrity of the packets, page, 5, lines 26-29) within the message sequence (but first to arrive, page 5, lines 24-25); thus, the first timer value will be "0" (because it did not arrive) and the second timer value will be the actual time of arrival (i.e., timestamps not identical); the redundant packet's payload "overwrites" the missing packet's missing/empty payload];

wherein a respective one of the first and second timer values, at which a respective one of the first and second data telegrams is received, corresponds to a cycle number of an isochronous cycle during which the respective one of the first and second data telegrams is received **[since the data telegrams are received in an Ethernet communication system (page 5, line 2), the received arrival times can be timestamps according to the receiver's cycle number within an isochronous cycle. In the alternative, timestamps are well known to those skilled in the art. A timestamp (timer value) can be determined by (a) the real-time arrival at the receiver; (b) time-to-live countdown timers within the packet itself; (c) real-time transmission from the transmitting source; (d) other timing characteristics within the network (e.g., Ethernet cycle number within an isochronous cycle); as well as (e) real-time determinations from a third source (e.g., GPS time). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used time-stamps to determine packet arrival differences for determining whether a received packet has been received, as well as determining if a received packet is a redundant packet because timestamps are useful for not only determining arrival time and timeliness of packet transmission within a network, but also to determine other network metrics of quality (page 10, lines 17-20)]**.

10. With regard to claim 6, Nelson discloses a node having an application in an isochronous real-time fast Ethernet data network **[Ethernet, page 5, line 2]** for real-time communication with at least one redundant network path **[interpreted as being received from 2 distinct paths]**, the node comprising:

a first receiver configured to receive a first data telegram at a first receive port and at a first timer value **[the first packet's arrival time (interpreted as the first timer value) is saved, page 10, lines 15-22]**, wherein the first data telegram has an identifier **[node D receives duplicate packets from one path as well as from the redundant path, col. 5, lines 18-25; each packet has an individual identifier which allows the receiving node to determine which packets are duplicates, page 9, lines 30-31]**;

a memory, wherein the memory is configured to store user data of the first data telegram in an address space **[each packet has an individual identifier which allows the receiving node to determine which packets are duplicates, page 9, lines 30-31; address space is interpreted as each individual packet's location within the entire message]** that is assigned to the identifier **[each packet is stored—thus allowing the receiver to determine if the packets are duplicates, page 9, lines 25-31]**, and wherein the memory is configured to store the first timer value **[the first packet's arrival time (interpreted as the first timer value) is saved, page 10, lines 15-22]**;

a second receiver configured to receive a second data telegram at a second receive port and at a second timer value **[the redundant packet's arrival time (interpreted as the second timer value) is saved, page 10, lines 15-22]**, wherein the second data

telegram has the identifier of the first data telegram **[node D receives duplicate packets from one path as well as from the redundant path, col. 5, lines 18-25]**; and

a writer configured to overwrite the address space and the stored first timer value of the first data telegram with user data of the second data telegram and with the second timer value of the second data telegram, if the first timer value and the second timer value are not identical **[from the sequence of received packets, it can be determined if the original packets did not arrive because the redundant packets will contain the correct identifier of the packet (e.g., when node D saves both primary and redundant packets to verify integrity of the packets, page, 5, lines 26-29) within the message sequence (but first to arrive, page 5, lines 24-25); thus, the first timer value will be "0" (because it did not arrive) and the second timer value will be the actual time of arrival (i.e., timestamps not identical); the redundant packet's payload overwrites the missing packet's missing/empty payload]**;

wherein a respective one of the first and second timer values, at which a respective one of the first and second data telegrams is received, corresponds to a cycle number of an isochronous cycle during which the respective one of the first and second data telegrams is received **[since the data telegrams are received in an Ethernet communication system (page 5, line 2), the received arrival times can be timestamps according to the receiver's cycle number within an isochronous cycle. In the alternative, timestamps are well known to those skilled in the art. A timestamp (timer value) can be determined by (a) the real-time arrival at the receiver; (b) time-to-live countdown timers within the packet itself; (c) real-time transmission from the transmitting source; (d) other timing characteristics within the network (e.g.,**

Ethernet cycle number within an isochronous cycle); as well as (e) real-time determinations from a third source (e.g., GPS time). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used time-stamps to determine packet arrival differences for determining whether a received packet has been received, as well as determining if a received packet is a redundant packet because timestamps are useful for not only determining arrival time and timeliness of packet transmission within a network, but also to determine other network metrics of quality (page 10, lines 17-20)].

11. With regard to claim 7, Nelson discloses an isochronous real-time fast Ethernet data network **[Ethernet, page 5, line 2]** for real-time communication, comprising:

at least one redundant network path **[interpreted as being received from 2 distinct paths]**; and a plurality of nodes, wherein at least one node has an application, and wherein the at least one node comprises:

a first receiver configured to receive a first data telegram at a first receive port and at a first timer value **[the first packet's arrival time (interpreted as the first timer value) is saved, page 10, lines 15-22]**, wherein the first data telegram has an identifier **[node D receives duplicate packets from one path as well as from the redundant path, col. 5, lines 18-25; each packet has an individual identifier which allows the receiving node to determine which packets are duplicates, page 9, lines 30-31]**;

a memory, wherein the memory is configured to store user data of the first data telegram in an address space **[each packet has an individual identifier**

which allows the receiving node to determine which packets are duplicates, page 9, lines 30-31; address space is interpreted as each individual packet's location within the entire message] that is assigned to the identifier **[each packet is stored—thus allowing the receiver to determine if the packets are duplicates, page 9, lines 25-31]**, and wherein the memory is configured to store the first timer value **[the first packet's arrival time (interpreted as the first timer value) is saved, page 10, lines 15-22]**;

a second receiver configured to receive a second data telegram at a second receive port and at a second timer value **[the redundant packet's arrival time (interpreted as the second timer value) is saved, page 10, lines 15-22]** wherein the second data telegram has the identifier of the first data telegram **[node D receives duplicate packets from one path as well as from the redundant path, col. 5, lines 18-25]**; and

a writer configured to overwrite the address space and the stored first timer value of the first data telegram with user data of the second data telegram and with the second timer value of the second data telegram, if the first timer value and the second timer value are not identical **[from the sequence of received packets, it can be determined if the original packets did not arrive because the redundant packets will contain the correct identifier of the packet (e.g., when node D saves both primary and redundant packets to verify integrity of the packets, page, 5, lines 26-29) within the message sequence (but first to arrive, page 5, lines 24-25); thus, the first timer value will be "0" (because it did not arrive) and the second timer value will be the**

actual time of arrival (i.e., timestamps not identical); the redundant packet's payload overwrites the missing packet's missing/empty payload];

wherein a respective one of the first and second timer values, at which a respective one of the first and second data telegrams is received, corresponds to a cycle number of an isochronous cycle during which the respective one of the first and second data telegrams is received **[since the data telegrams are received in an Ethernet communication system (page 5, line 2), the received arrival times can be timestamps according to the receiver's cycle number within an isochronous cycle. In the alternative, timestamps are well known to those skilled in the art. A timestamp (timer value) can be determined by (a) the real-time arrival at the receiver; (b) time-to-live countdown timers within the packet itself; (c) real-time transmission from the transmitting source; (d) other timing characteristics within the network (e.g., Ethernet cycle number within an isochronous cycle); as well as (e) real-time determinations from a third source (e.g., GPS time). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used time-stamps to determine packet arrival differences for determining whether a received packet has been received, as well as determining if a received packet is a redundant packet because timestamps are useful for not only determining arrival time and timeliness of packet transmission within a network, but also to determine other network metrics of quality (page 10, lines 17-20)]**.

12. With regard to claim 8, Nelson discloses a computer program product for a node in an isochronous real-time fast Ethernet data network **[Ethernet, page 5, line 2]** for real-time communication by means of data telegrams identified by identifiers, the computer program product comprising: a computer-readable medium; and computer-readable instructions on the computer-readable medium enabling a processor to perform the following operations:

at a first receive port, receiving a first data telegram at a first timer value **[the first packet's arrival time (interpreted as the first timer value) is saved, page 10, lines 15-22]**, wherein the first data telegram has an identifier **[node D receives duplicate packets from one path as well as from the redundant path, col. 5, lines 18-25; each packet has an individual identifier which allows the receiving node to determine which packets are duplicates, page 9, lines 30-31]**;

in a memory of the node, storing user data of the first data telegram in an address space **[each packet has an individual identifier which allows the receiving node to determine which packets are duplicates, page 9, lines 30-31; address space is interpreted as each individual packet's location within the entire message]** that is assigned to the identifier **[each packet is stored—thus allowing the receiver to determine if the packets are duplicates, page 9, lines 25-31]**;

storing the first timer value **[the first packet's arrival time (interpreted as the first timer value) is saved, page 10, lines 15-22]**;

at a second receive port, receiving a second data telegram at a second timer value **[the redundant packet's arrival time (interpreted as the second timer value) is saved, page 10, lines 15-22]**, wherein the second data telegram has the identifier of the first data telegram **[node D receives duplicate packets from one path as well as from the redundant path, col. 5, lines 18-25]**; and

if the first timer value and the second timer value are not identical, overwriting the address space and the stored first timer value of the first data telegram with user data of the second data telegram and with the second timer value of the second data telegram **[from the sequence of received packets, it can be determined if the original packets did not arrive because the redundant packets will contain the correct identifier of the packet (e.g., when node D saves both primary and redundant packets to verify integrity of the packets, page, 5, lines 26-29) within the message sequence (but first to arrive, page 5, lines 24-25); thus, the first timer value will be "0" (because it did not arrive) and the second timer value will be the actual time of arrival (i.e., timestamps not identical); the redundant packet's payload overwrites the missing packet's missing/empty payload]**;

wherein a respective one of the first and second timer values, at which a respective one of the first and second data telegrams is received, corresponds to a cycle number of an isochronous cycle during which the respective one of the first and second data telegrams is received **[since the data telegrams are received in an Ethernet communication system (page 5, line 2), the received arrival times can be timestamps according to the receiver's cycle number within an isochronous cycle. In the**

alternative, timestamps are well known to those skilled in the art. A timestamp (timer value) can be determined by (a) the real-time arrival at the receiver; (b) time-to-live countdown timers within the packet itself; (c) real-time transmission from the transmitting source; (d) other timing characteristics within the network (e.g., Ethernet cycle number within an isochronous cycle); as well as (e) real-time determinations from a third source (e.g., GPS time). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used time-stamps to determine packet arrival differences for determining whether a received packet has been received, as well as determining if a received packet is a redundant packet because timestamps are useful for not only determining arrival time and timeliness of packet transmission within a network, but also to determine other network metrics of quality (page 10, lines 17-20)].

13. With regard to claim 2, Nelson discloses that if the first and the second timer values are identical, if the user data of the first data telegram are not valid, and if the user data of the second data telegram are valid, overwriting the address space with the user data of the second data telegram **[this is interpreted as the corruption of packets sent along the primary path (i.e., the primary packets' error rate reaches a predetermined threshold), then the redundant path (and packets) are used, page 11, lines 4-9; thus the timer values may be identical, but the second packet will have reached the received "uncorrupted."]**.

14. With regard to claim 3, Nelson discloses that the address space, which is assigned to the data telegrams having the identifiers, is overwritten with respective user data of a respective one of the data telegrams, only if the respective data telegram having a respective one of the identifiers is valid **[each packet has an individual identifier which allows the receiving node to determine which packets are duplicates, page 9, lines 30-31; address space is interpreted as each individual packet's location within the entire message]**.

15. With regard to claim 4, Nelson discloses that, in addition to receiving real-time critical data, non-real-time critical data are received **[this is well-known within a system utilizing different transport technologies such as Ethernet, RS-232, ATM, and SONET, page 5, lines 1-4]**.

16. With regard to claim 5, Nelson discloses that only user data of valid data telegrams are stored in the address space **[this is interpreted as the corruption of packets sent along the primary path (i.e., the primary packets' error rate reaches a predetermined threshold), then the redundant path (and packets) are used, page 11, lines 4-9; thus the timer values may be identical, but the second packet will have reached the received "uncorrupted."]**.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

(a) Matthews et al. (USP 6,584,122), Method and system for providing voice and data service.

(b) Miller et al. (USP 6,247,058), Method and apparatus for processing network packets using time stamps.

(c) Drake, Jr. et al. (USP 6,895,024), Efficient implementation of 1+1 port redundancy through the use of ATM multicast.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A. Mais whose telephone number is 572-272-3138. The examiner can normally be reached on M-Th 5am-4pm.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan F. Wing can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MAM
June 22, 2007

6/25/07

WING CHAN
SUPERVISORY PATENT EXAMINER